



## Non-alignment forum in Managua

Managua. Dozens of state flags are to be seen at the entrance to the conference hall of the Augusto Cesar Silva tourist centre where the emergency meeting of the non-aligned countries' Coordination Bureau is being held. It is the first time in the history of the non-alignment movement that a forum of this dimension has been devoted to the socio-economic problems of Latin America.

The recent American British aggression against Argentina in the South Atlantic, the prevailing colonial occupation of Puerto Rico by the United States of America, the complex problems called forth by the domination of American monopolies in the economies of Latin American countries, — all these and many other matters are in the focus of attention of the forum of non-aligned countries in Managua.

Argentina protests at

Buenos Aires. Argentina's permanent representation at the United Nations has distributed its protest note over British Prime Minister Margaret Thatcher's visit to the Falkland Islands (Islands Malvinas) as an official document.

This provocative and insulting visit is directed against Argentina and all Latin American countries, the note points out. It confirms that Britain's policy is colonialist and expansionist.

Argentina has repeatedly expressed its readiness to resolve the conflict on the basis of fair

## WHAT WILL NATO SAY?

Brussels. The peace proposals put forward by the Soviet Union and other socialist countries as formulated in Yuri Andropov's report of December 21 and in the Political Declaration adopted by the Warsaw Treaty countries on January 5 will be the main issue which the NATO foreign ministers are to discuss at their

meeting at the end of February and early in March.

According to "The Western World", a bulletin close to NATO Headquarters, this inter-governmental meeting will be as useful as the conference of NATO ministers held in a Canada early last October. The regular NATO session is to take place on June 9-10.

## VIEWPOINT

Eduard RYABTSEV

## Against the anachronisms of imperial policy

Any realistic programme for improving international relations and strengthening universal security has to be in the interests of the whole of mankind. It is logical, therefore, that the measures in this direction suggested by the leaders of the socialist countries in Prague are by no means confined to purely European problems.

In their Political Declaration the participants of the Warsaw Treaty, for instance, stressed the imperative need to prevent the zone of operation of existing military blocs being extended to other parts of the world, and, in particular, to the volatile Persian Gulf.

There is no special need to prove that this issue is immensely important primarily for the developing nations. It should be clear to all that an attempt of confrontation to the turbulent "third world" would have disastrous consequences for many peoples.

Meanwhile the Reagan administration continues to believe that its notorious "position of



The new look for 1983.

Drawing by Konstantin Rybalko

## Japan to help United States in open conflict

Tokyo. Tokyo has officially confirmed that it will make available to the United States all types of Japanese military technology even if the Americans become involved in an open military conflict. This was announced by Masaharu Gotoda, General Secretary of the Japanese Cabinet of Ministers. News-paper reports say that the Pentagon is mainly interested in its Far Eastern ally supplying technical documents for the production of very big integrated circuits for advanced missile guidance systems, as well as laser installations, optical fibre and special coatings to make aircraft "invisible" to radar.

The Japanese government's decision is an open violation of the principles adopted by Japan to refrain from the export of weapons. The Kyodo Taushin news agency notes that it threatens Japan with becoming involved in military conflicts and contradicts the peace clauses of the Japanese Constitution.

Within NATO, the British war on the Malvinas has to be seen not just as an isolated episode, but as part of legalized NATO practice. In this respect the desire of the socialist nations to outlaw the use of force in international relations advances the interests not just of the Europeans. Scaling down the military threat, which is essential for a climate of trust between nations, is the essential condition for normalizing the situation in conflict spots in the Middle East, the Persian Gulf and South-West Asia.

Hardly anyone would dare to challenge the good sense of the Prague initiatives aimed at eliminating violence, dictatorship and interference in other nations' affairs. Worldwide support for these initiatives would help to away forever with any relapses into the dated imperial policy which America has been working so hard to resurrect.

The socialist nations have stressed that they want to see a world free of wars and arms. Were other statesmen to show an equal understanding of their own historic responsibility for the fate of the world, the American attempts to expand the geographic zone of NATO operations would look like a typical anachronism of the old "position of strength" policy.

This is why a cover or overt refusal to support the Warsaw Treaty's rational proposals for normalizing the overall situation in the world has to be viewed as an attempt on the part of certain powers to use the same old strategies of violence in international relations.

Should this kind of political reckoning become dominant

## Conference favours American-Soviet trade

Chicago. The all-round development of trade and economic relations between the Soviet Union and the United States is in the interest of both nations. This was the opinion expressed by delegates who attended a meeting in Chicago on the subject of American-Soviet trade. It was held on the initiative of 15 organizations, including the American-Soviet Trade and Economic Council, and the American Committee for East-West Accord.

Equitable trade has always been advantageous to all taking part, said one of the delegates, John Allen.

## Air crash mystery

Washington. AP-TASS. The investigation into the causes of the crash of a United Air Lines DC-8 aircraft with containers of radioactive substance on board has run into unexpected difficulties, said company representative Ch. Novak.

The task group sent urgently to the site of the crash by the National Transportation Safety Board has failed to reconstruct the "complete picture" of events due to the unusually heavy damage done to the plane's body.

Taking into account the fact that the crash was immediately reported to the Federal Nuclear Regulatory Commission and that the Federal Aviation Administration gave an urgent order to evacuate all passengers and personnel from the airport area, local observers believe that the radioactive substances which were on board could be immediately related to the cause of the explosion.

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Washington. President Reagan has officially announced the resignation of Richard Schweiker as Secretary of Health and Human Services. He is to be succeeded by Margaret Heckler, formerly a Representative of the state of Massachusetts.

According to the White House, Schweiker decided to resign following an offer of a highly paid job by a private commercial firm. The press, however, believes that his resignation is due to differences within the Reagan administration over the solution of acute economic and social problems.

Polish security agencies have established that she was collecting intelligence information in blatant violation of her status as journalist. The Polish Foreign Ministry reacted by sending a strong protest to the American Embassy in Warsaw.

Polish television has reported that R. Gruber, who was closely linked with the KSS-KOR organization, has a previous record of gathering intelligence information on the Polish defence capabilities. On the same day the British authorities announced the bankruptcy in Belfast, Northern Ireland, of the sports car company belonging to Delorean. It turned out he had decided to try his luck in the contraband sale of narcotics in order to ease his financial difficulties. But he failed...

GOVERNMENT REFORMS OF BRITISH TRADE UNION MOVEMENT IN THE AIR

London. The just announced draft law on reforms to the nation's trade union movement is but a government attempt to curtail the authority of the British Trades Union Congress. The Tories are planning to introduce secret balloting in work collectives before any decision to strike is made thus enabling managers to influence the vote. The draft also envisages much stronger government control over trade unions' use of their funds and over their staging of picketing, meetings, demonstrations and other protest actions.

MIN INFORMATION No. 5, 1983

## FACTS and EVENTS

© The government of Greece intends to advance a clear-cut timetable for the dismantling of the American military bases on Greek territory when the American-Greek negotiations resume in Athens later this month. This has been declared by the official government representative D. Maroudas.

© The International Monetary Fund loan to South Africa is meant to strengthen Pretoria's military power, writes the Nigerian "Satellite". Most of the money which the racists will receive from the IMF will be spent on buying military hardware and equipment for the USA and other NATO countries.

© The first flight of the second US Challenger reentry spaceship originally scheduled for late January has been delayed by approximately one month. This has been announced by the National Aeronautics and Space Administration (NASA). The delay was necessitated by a difficult fuel system.

© According to the US Bureau of the Census, the American population stood at 232,616,497 as of January 1, 1983. Last year the increase in population amounted to 2,100,000 or to 0.9 per cent as compared to one per cent increase in 1982 and 1981.

© Chairman of the GDR Council of State Erich Honecker has presented the order of the Star of Friendship Among Nations to the Soviet-GDR friendship society for its great contribution to promoting German-Soviet friendship and in order to commemorate its 25th anniversary.

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PEOPLE

John Delorean, a designer of sports cars and former vice-president of General Motors has been detained at Los Angeles airport. He had attempted to smuggle through customs about one hundred kilograms of cocaine valued at 24 million dollars. On the same day the British authorities announced the bankruptcy in Belfast, Northern Ireland, of the sports car company belonging to Delorean. It turned out he had decided to try his luck in the contraband sale of narcotics in order to ease his financial difficulties. But he failed...

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Following the overthrow of the Pol Pot regime which exterminated thousands of teachers and turned schools into prisons, and torture cells, the educational system in Kampuchea had, in effect, to be resurrected right from square one.

At present there are over 1,500,000 schoolchildren in the country. The Soviet Union, Vietnam and other socialist countries are giving Kampuchea a lot of assistance, providing it with school equipment, textbooks, exercise-books and experienced teachers.

In the photo: first-form classes in progress at a Kampuchean school.

## Growth in Indian-CMEA trade

Delhi, India. The fast growth of trade between India and the CMEA countries which amounted to 27,780 million rupees in the 1980-81 fiscal year. The socialist countries are now the main suppliers of various industrial equipment and chemical products to India. In return, they buy not only the traditional Indian export items such as tea, tobacco, coffee and spice, but also many manufactured goods.

## Science and technology

### ELECTRONIC MICHELANGELO?

Robots are infiltrating the arts with increasing confidence. Some have even produced paintings.

According to the British "Sunday Times", a robot has recently been designed which can sculpt in marble. But would art benefit from such a newfangled electronic Michelangelo?

Seminar members noted the

influence as well as from the state-run company of Bharat Heavy Electricals Ltd have taken part in the design of the station.

CURE FOR INSOMNIA?

A new electronic device designed by specialists at the national biophysical laboratory of the Hungarian Academy of Sciences may help people who suffer from insomnia. A patient is put into a deep sleep by means of electric impulses coming from two electrodes touching the back of the head and the forehead. Their frequency and amplitude can be regulated. Experts consider that the device is suitable for use in hospitals as well as in the home.

GIANT TOMATOES

Selectionists at an experimental farm in Valencia, Spain, have developed a new variety of giant tomatoes. Each one weighs up to two kilograms and has a pleasant taste.

## HOLES IN NATO PRECAUTIONS

London. A court martial being held at the Royal Air Force base near the West German city of Wildenrath in the Airo-Asian region of Dusseldorf, is trying two British pilots who shot down a British Jaguar fighter with a live missile during a training flight on May 25 last year. The two men were flying an American-built Phantom which was also taking part in the exercises. During the very first days of the trial it has been shown that NATO's forces in Western Europe are taking inadequate precautions to prevent accidents during their manoeuvres and training. Apart from causing accidents, this could also lead to serious international complications.

## OLOF PALME TRAILED BY CIA

Stockholm. Olof Palme, Sweden's Prime Minister, was under US surveillance in Vietnam. He made an anti-war speech in the main square of the city, which was approved by the country's government. All this provoked Washington's ill-concealed ire. The American president at the time, Lyndon Johnson, even recalled the United States ambassador to Stockholm for "consultations". A court martial is being held in relation between the two countries. The newspaper attributes this to the fact that a powerful protest movement against the criminal American war in Vietnam, Palme being an active participant in the movement, enveloped the whole of Sweden in the late sixties.

In 1968, "Olof" Palme, then Minister of Education and Culture, took part in the famous torch

## FROM the SOVIET PRESS

### A VICIOUS CIRCLE OF LIES

Writing in *IZVESTIA* Yu. Bandura shows up the American propaganda attempts to accuse the USSR of all the major sins of the modern world.

The problem is however that the lie that is protected by the propaganda agencies of the United States against the Soviet Union is not just the result of a pathological love of distorting the truth, it is also a lie of self-protection—a lie to protect Washington's foreign policy. This is why telling the truth about the real state of affairs over the issue of chemical war agents is not to the United States' liking—the truth of the matter is, indeed, that chemical agents were used by the American troops in Indochina and that American chemical agents have been utilized by America's henchmen against the Afghan people.

Nor are they any too willing to tell the truth about the actual content of the USSR Middle East policy; for this would mean that they would have to concede that it is the USA that is fanning the aggression in the Middle East and thus keeping it going, using terrorists for this purpose.

### PRESIDENT REAGAN'S STATEMENT

Analysing President Reagan's latest statement, *PRAVDA* notes among other things his avowed willingness to consider with his partners any Soviet actions and proposals which could, in his words, actually promote the cause of peace.

But the president knows full well, the paper points out, that while unprecedented plans for American militarization are underway and American policy is fanning in the notorious "zero option", the Soviet Union has come up with a realistic programme, concrete measures to end the arms race, primarily in nuclear weapons, to reduce international tension and ensure the security of all peoples. It is American obstructionist position at the Geneva talks rather than the Soviet "negative tactic" as referred to by the president, that is hindering the talks, the newspaper points out.

### THE NATO REACTION TO SOVIET INITIATIVES

Assessing NATO's reaction to the Soviet peace initiatives, and specifically those on limiting nuclear armaments in Europe, in *LITERATURNAYA GAZETA* Vladimir Lomtsova concentrates on two aspects of the issue: On the one hand, Washington, London, Bonn and several other Western capitals hastened to stress, without having condescended to study the Soviet proposals, that they were nothing new and did not go far enough in doing so they reveal themselves for what they are—people who are little interested in attaining agreement. In their haste they have forgotten that the time for secret diplomacy is long past. In a nuclear age, when the prime issue is that of the life or death of millions of people and their children, the Moscow New Year message provides a chance of averting the nuclear threat. Having at long last woken up to the public sentiment, Western capitals realized they were acting unwise.

To repair the damage done, they hastened to stress that the Soviets had made a step in the right direction and the West should give these proposals serious consideration. Better late than never one might quip, on long of course, as such a reappraisal of things is sincere. But the truth of the matter is that these admissions are more often than not insincere and are tactical in nature, lacking in constructive counter-proposals, the NATO chiefs are manoeuvring to seek to allay people's fears and to drag out the talks indefinitely, Lomtsova points out.

### TOWARDS SECURITY IN THE INDIAN OCEAN

Analysing the relevant Western, and in particular American position, in *SOVIETSKAYA ROSSIYA*, I. Suckov points out that Washington's diplomats support and cover up the Pentagon designs. And the latter, regarding the Indian Ocean as a "zone of US interests", is all out to escalate military tension there. Work is in full swing, for instance on expanding the Diego Garcia naval and air base, which lies very nearly in the centre of the Indian Ocean and controls the ocean transport lanes. The base will host nuclear submarines, long-range B-52 bombers, Phantom jets, nuclear warheads and transport ships with ammunition for the "rapid deployment force".

What does the Pentagon need all these weapons for and whose interests will they protect, being located in the very heart of the Afro-Asian region? Doubtless, they will serve to secure permanent access to Persian Gulf oil and to spread American influence—such are the goals of the American military industrial complex, the paper

## Round the Soviet Union

• THE FIRST RESEARCH VESSEL BELONGING TO THE SIBERIAN BRANCH OF THE USSR ACADEMY OF SCIENCES HAS BEEN LAUNCHED ON THE OB RIVER. It starts off the Academy of Sciences' fleet to carry out hydrological, biological, geological and other research in areas deep in the taiga only accessible by water. The expeditions will be equipped with bathyscaphes, automatic buoys and floating platforms. The first groups of researchers will work on small taiga rivers.

• THE DAULETABAD GAS FIELD IN SOUTHERN TURKMENIA PRODUCING 5,000 MILLION CUBIC METRES PER YEAR NOW SUPPLIES GAS TO THE CENTRAL ASIA — CENTRE MAJOR PIPELINE. A large gas-producing complex has appeared here in the Karakum Desert — a gas preprocessing plant, pipelines and more than ten deep wells.

• A DAM ON THE MOUNTAIN ANDREN RIVER ON THE SPURS OF THE TIEN SHAN MOUNTAINS OFFERS RELIABLE PROTECTION AGAINST MUD STREAMS AND FLOODS. Nine reservoirs were built in 1982 on the small rivers of Uzbekistan enabling thousands of hectares of cotton fields to be irrigated.

• "OUTER SPACE FOR THE NATIONAL ECONOMY" IS THE MOTTO OF AN EXHIBITION BEING HELD AT KALUGA'S KONSTANTIN TSILIOVSKY STATE MUSEUM OF SPACE FLIGHTS. The material on display illustrates how Soviet space flights are used for the study of the Earth's natural resources, for weather forecasts, navigation and communications.

• KIRGHIZIA HAS BECOME A MAJOR PRODUCER OF ELECTRIC POWER. The republic's power system gauges show that 10,000 million kilowatt-hours have been produced since the beginning of 1982. Accelerated construction on a chain of hydroelectric power stations on the Naryn River has contributed to the industry's dynamic development.

## The management game



Traspol amalgamation director Valentina Solovyova discussing the results of a recent game with those who took part.

## A power station to operate on subterranean heat

The construction of a power station to operate on subterranean heat has been started in the USSR. The station is being built in the North Caucasus. In the European part of the Soviet Union temperature rises by 25 degrees with every kilometre downwards on average, whereas in the above-mentioned area temperatures increase at a rate of over 40 degrees.

Water from underground will gush through pipes to the power station. After it gives off its heat to the turbines the water will be pumped back underground. The merits of such a scheme are evident. First of all, an inexhaustible source of thermal energy is ensured. There is a possibility to set up geothermal stations in the areas featuring no hot springs; such stations are isolated from the environment.

This is a low-power station, however, it will serve as a basis for building high-power stations.

Experts are busy calculating the parameters of a million-kilowatt station.

Two wells have already been sunk. One is 4.5 kilometres deep and the other slightly less than that. The third one has reached the depth of 1,500 metres. In all, six wells are to be drilled to make the unusual power station operable.

## KURSK APS FOR THE OSKOL IRON COMPLEX

With a new 20 km long transmission line, electric current from the Kursk atomic power station has started feeding the most important project of the current five-year plan, the Oskol electrosmelting combine.

The new power transmission line is the largest in the Black Sea Area, a central economic district of the Russian Federation, providing completely for the Oskol combine and the Lebedinsky and Stolnitsky ore-dressing combines.

Designed to give accurate doses of liquids and loose materials, the miniature gauges will replace the cumbersome and metal-consuming devices that have been used until now.

This completes the electrification of a vast production complex centered around the Belgorod Region on the basis of the Kursk Magnetic Anomaly.

reduce waste. More fertilizers and fodder will be produced for agriculture as a result.

Microelectronics have been used to build the flow meters thus ensuring increased reliability, smaller size and lower metal consumption.

## KURSK APS

## FOR THE OSKOL IRON COMPLEX

Tonnes of non-ferrous metals are moved through the use of miniature instruments — flow meters manufactured at the Taldy-Korgut amalgamation, in Estonia, for chemical enterprises producing fertilizers and communal fodder.

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Plantations of young trees are extending further and further into the desert, while the old timber is cut down. The protected land produces fruit and grapes, as well as cotton yields here being over 3 tonnes per hectare.

The offensive against the encroaching desert is proceeding at a fast pace in Uzbekistan with 15 thousand hectares being planted with trees annually.

## FROM the SOVIET PRESS

### FAR EASTERN CENTRE'S PROMISING PROGRAMMES

The Far Eastern Centre is the youngest scientific establishment in this country — it was founded less than 15 years ago. It is also young and prefers to work in the tranquil atmosphere of academic surroundings but in very isolated locations such as small islands and at sea, writes the SOVIETSKAYA ROSSIYA newspaper.

After working for several seasons aboard fishing trawlers young scientists attached to the Institute of Automatics and Control Processes have devised methods of predicting fish concentrations in the sea. This project alone saves 1.5 million rubles every year.

It was the scientists who were the first to bring about over the irrecoverable losses suffered by the ocean, demanding a transfer to more reasonable ways of using its resources. The interdisciplinary "Salmon" programme is probably the best example of how science assists production. It includes specialists on fishing and marine biology as well as geologists, physiologists, mathematicians, hydrologists, chemical engineers, etc. The programme envisages the development in the Far East of a mechanized and automated salmon breeding industry promising 10 rubles of profit per every ruble invested.

The ocean is now approached as an alternative source of energy. The Volcanology Institute functions near the mountains in Kamchatka. Its scientists have already studied virtually all the volcanoes in Kamchatka and the Kuril Islands, and as a result have suggested what promises to be an effective procedure for predicting tremors. At present volcanologists are busy working on the use of volcanic heat energy and the first geothermal station has already been built in Kamchatka. The institute recently put forward a bold though quite feasible project for pumping water deep inside the earth to convert it into steam for power stations.

### DOCTORS AND INDUSTRY

How can the work of those working in electronics be made easier? How best can we combat the specific fatigues that are present in this promising and fast developing industry? The management of the Tomsk semiconductor factory turned to the Moscow Helmholtz eye disease research institute for help on these and other matters, writes IZVESTIA.

They asked oculists to come to the factory to see if eye fatigue could be reduced. They readily agreed and a cooperation agreement had been signed with the plant. Having analysed the cause of eye fatigue the researchers worked out a special set of exercises for workers in the electronics industry. They helped workers overcome the mistaken idea of their being unable to fight fatigue. Methods of psychological relaxation and general tonic procedures were used.

Doctors have also worked out recommendations for occupational checkups for workers in electronics. These have been approved by the USSR Ministry of Public Health and will very soon be enforced.

### HOW SHOULD WE EDUCATE OUR FARMERS?

I was once present at a school quiz, writes journalist V. Shukhevich in KOMSOMOLSKAYA PRAVDA. The children at a school in a rural area were shown several heads of corn and asked to identify them. "Rye? Wheat? Barley?" Also, most of the teachers failed to come up with the right answer.

Today farmers' children are acquainted with technology from an early age and being conversant with it has now become a matter of pride for them. This is as it should be — no farm can do without modern machinery.

But are we not perhaps overlooking another side to the upspring of would-be farmers? If the same boys were asked about meadow grasses or rye flowers, there

## A RECORD IN GAS PRODUCTION

500,000 million cubic metres of natural gas was produced in the USSR in 1982.

Growth rates in Soviet gas production are high. 91,000 million cubic metres were produced between 1971 and 1975, and 146,000 million cubic metres — between 1976 and 1980. 35,000 million cubic metres more gas was produced in 1982 than in 1981.

65 new fields will have gone into operation over the current five-year plan period enabling 600,000 to 640,000 million cubic metres of gas to be produced annually. Urengol fields supplied a large share of the 1982 production. Six large gas pipelines will have been built in Western Siberia before 1985. Two of them connecting Urengol to Moscow and Petrovsk are already operational. The Urengol-Novopokrov line is nearing completion, while the construction of the export-oriented Urengol-Pomary-Uzgorod line is going ahead at a fast pace.

Non-Experts are busy calculating the parameters of a million-kilowatt station.

Two wells have already been sunk. One is 4.5 kilometres deep and the other slightly less than that. The third one has reached the depth of 1,500 metres. In all, six wells are to be drilled to make the unusual power station operable.

## A GREEN BELT FOR THE DESERT

A wide green strip has appeared on the map of the South Kyzylkum in Uzbekistan where a 120 km long plantation of trees has been planted separating the desert sand dunes from the fertile Zeravshan Valley.

The sand used to encroach on 200 hectares of irrigated land annually swallowing the fertile plantations of the Iltukhore oasis. Fifty years ago this country's first desert forestry plantation was established, and the fifty-year-old bayonet trees now form part of the 125-thousand-hectare forest belt.

Plantations of young trees are extending further and further into the desert, while the old timber is cut down. The protected land produces fruit and grapes, as well as cotton yields here being over 3 tonnes per hectare.

The offensive against the encroaching desert is proceeding at a fast pace in Uzbekistan with 15 thousand hectares being planted with trees annually.

It will be the height of a twelve-storey house that jets of water will dash up into the sky from this country's first floating colour-and-music fountain designed by scientists from Yekaterinburg for the Black Sea coast resort of Sochi. Powerful pumps hidden from view will lift sea water in a solid wall to a height of 20 metres.

Me have received more than 150 orders from Soviet cities as well as abroad for our colour-and-music fountains, says A. Abramyan, Professor at the Yerevan Polytechnic. And in the near future ready to be installed, one of them, for instance, in Tashkent. An eight-hundred-pipe fountain will go into operation in the Czechoslovak city of Brno. We have designed an appliance to make

## WHAT ARE THE ATTRACTIONS OF SCI-FI TODAY?

This question is answered in MOSKOVSKY KOMSOMOLETZ by the Strugatsky brothers, the well-known Soviet sci-fi writers whose twenty books have appeared in many countries.

We believe science fiction to be the ideal literary tool, they write, enabling people to approach one of the most important problems of today — that of the future invading the present. This intrusion has to be solely attributed to the unheard-of rates of social and technological progress that humanity has achieved in the course of the past several decades. The seeds planted in the soil of our life came up now before we reach old age, i.e., not in the evening, but at noon. The active development of outer space, the genetic revolution, the "Great Deluge" of information — these are hard facts belonging to a single generation.

The ocean is now approached as an alternative source of energy. The Volcanology Institute functions near the mountains in Kamchatka. Its scientists have already studied virtually all the volcanoes in Kamchatka and the Kuril Islands, and as a result have suggested what promises to be an effective procedure for predicting tremors. At present volcanologists are busy working on the use of volcanic heat energy and the first geothermal station has already been built in Kamchatka. The institute recently put forward a bold though quite feasible project for pumping water deep inside the earth to convert it into steam for power stations.

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## Places to visit



## Science and technology

### EARTHQUAKE CONTROL

A seismographic observatory — the largest seismic research centre in Central Asia — has gone into operation on the spur of the Ala-Archa Gorge.

The heart of the research complex, which located 30 kilometres from the Kirghiz capital of Frunze, is a 210 long horseshoe-shaped tunnel in the rock filled with complex automatic equipment. Sensitive probes keep a round-the-clock vigil over the "breathing" of the earth's crust transmitting information to the laboratory complex for decoding and analysis.

The Ala Archa observatory completes the vast forest area around Frunze. It controls three geophysical seismic stations, four borehole observation posts, and a computer centre.

Kirghiz seismologists have been very successful in solving a number of problems connected with the study of earthquakes: they have established a unified seismic observation service which provides detailed maps for all districts and towns in the mountainous area. No large project can be built in Kirghizia without the approval of seismologists and geophysicists. Sophisticated research technology will allow for more efficient early warning systems for earthquakes and for improved forecasting as to the time, place and magnitude of the tremors.

The solar hot ring works on the principle of a salt bath. It is known that a salty solution with a concentration resembling that of seawater can be heated by the sun to 95°C. An original heating system enables the temperature to be retained over a long period. Water circulates through the pipes in heated air. It is converted into steam and then a condensate tank containing the water is all that is needed to charge the hot ring while a similar electric device consumes as much as 4 kW of electricity per hour.

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### LIVE DRUG FACTORIES

Researchers at the M. Shchepetilnikov Institute of Biophysics have made a material to synthesize insulin, the most important human hormone.

The work of A. Abramyan and his assistants is by no means confined to insulin. Breath-taking colour patterns are produced by the sounds of a colour-and-sound organ they have invented. Here the water jets are replaced by transparent glass tubes with special filling. The "Auroral Crystal" installation which produces a rotating flow of colour was very popular with visitors to a Soviet exhibition abroad.

The chemical synthesis of this drug is unusually complicated and costly. Gene engineering has provided an efficient method of obtaining insulin. The human genes responsible for the insulin synthesis is planted in bacteria which start manufacturing the drug.

The components stick together without glue since the hot metal sheet bathes with the polyethylene when rolled. As many as twenty layers can be made forming a combined material on the basis of steel, aluminium, copper or titanium. It acts as a good isolator for sound and heat, reduces vibration and is corrosion-resistant.

### A METALLIC 'PIE'

An unusual material consisting of alternating layers of metal and polymer has been produced at the Riga Polytechnical Institute in Latvia.

The components stick together without glue since the hot metal sheet bathes with the polyethylene when rolled. As many as twenty layers can be made forming a combined material on the basis of steel, aluminium, copper or titanium. It acts as a good isolator for sound and heat, reduces vibration and is corrosion-resistant.

### LASER BEAM MAKES IT STRONGER

Tools and punches become two to four times stronger when treated by continuous laser beams. Even cast iron which can not be tempered by conventional methods, increases its strength three times over. These properties of the gas laser have been used by physicists at the Kurchatov Atomic Power Institute for an automated line which will begin to be assembled next year at the Moscow ZIL auto works. It will be equipped with four lasers to temper most wear-prone parts without the slightest deformation. So the line can be used for final processing operations.

The closing in of the rates of industrial growth is certainly no accident. It reflects the fact that the task of overcoming the historical backwardness in the ethnic outlying regions has, on the whole, been completed, and there is no need for growth rates in individual areas to exceed the national average.

There are considerable differences in the rates of industrial growth. This is clearly unavoidable. But is the USSR if it is due to other reasons — better use of labour for natural resources in certain places, the country's natural endowments without "imperialism" in the country's national economy, and more rational distribution of productive forces.

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# ENTERTAINMENT

## Theatre, Cinema and TV Stars



## NATALYA SALKO

I immediately think of her eyes—big, trusting and, for some reason, always soft. It is hard to say what prompted chief artistic director Yuri Lyubimov of the Taganka Theatre in Moscow to invite Natalya Salko, fresh from the Shchukin Drama School, to join his company—was it her acting in L. Hanberry's play "The Sign in Sidney Brustein's Window" which was her graduation part, or the constant promotion of disaster in her merry, radiant eyes? She is now acting Ophelia in "Hamlet" and Sonya Gavrilov in "Here the Dawn Are Out", at the Taganka.

Although Salko has played the parts of several boisterous and merry modern girls in the cinema, it is her tragic heroines that are best remembered. Natalya's eyes always speak of some concealed drama, and film directors seem to have entered into a conspiracy always inviting her to play parts with a tragic outcome. The death which awaits these characters seems to leave an imprint on their psychological make-up, and their tragic destiny seems to be preordained by their dramatic temperament.

Her heroines are frail, feminine, faithful and reliable in love, and this loyalty seems to be Salko's forte. Profoundly tragic is the story of the life and death of Vera Komissarzhevskaya whose main character trait was faithfulness to art and to lofty ideals. The part of Komissarzhevskaya in Viktor Soskov's film "I Am an Actress" not only gave Salko the opportunity to display her talent, but also showed her to be very courageous. "Komissarzhevskaya ought to be played by Komissarzhevskaya herself," exclaimed Natasha on her first day on the set. "She was a character of outstanding talent and power who attracted Blok, Bryusov and Meyerhold. Playing Komissarzhevskaya I want to describe, rather than prove, how difficult it is to be an actress and how much strength is needed as well as blood, nerve, heart and one's whole self." This part caused people to talk of Salko as of a serious and profoundly emotional actress.

A short while ago she played another actress, her contemporary this time, who in her innermost qualities is certainly closer in character to Salko herself. There was a difficult aspect to this part—how to get across to the spectator the drama of love and the faithfulness of a person—in this case an actress—to her work and duty without departing from external similarity and specificity. The part in question is that of the actress Yuliya Maryanova in Dina Arsenyukhina's film, "The Voice". Natalya's heroine is mortally ill and the part she is working on is the last thing she is left with in life—the most important thing.

This role marks a new stage in Salko's artistic career. It is as if she has distilled into this performance all the experience she has acquired on the screen.

Vera ZHILTOVA

## FACTS and EVENTS

Premieres. The Manhattan Music club has put on a new production of Chekhov's "Three Sisters". Theatre critics and experts consider this to be evidence of the keen interest shown by Americans in Russian literature.

## THE NEW THEATRE SEASON

New production by such recognized directors as Oleg Yefremov, Yuri Lyubimov, Andrei Goncharov, Anatoly Efros, Mark Zakharov and Leonid Khlebnikov promise to be exciting this season. Oleg Yefremov is rehearsing the comedy "The Mother-of-Pearl Zinaida" by Mikhail Rostislav at the Moscow Art Theatre.

Anatoly Efros is achieving great things with the classics. Last year he produced Moliere's "Le Tartuffe" for the Moscow Art Theatre and he is now putting the finishing touches to Leo Tolstoy's "Living Corpse" with Alexander Kalyagin and Anastasiya Vertinskaya in the lead.

Mark Zakharov, the chief director of the Leningrad Komsomol Theatre, is working on "Three Girls in Blue" based on Lyudmila Petrushevskaya's play of the same name, about simple but not very happy women. Their actions are motivated by love and care for their children.

The creative alliance between the experienced Maly Theatre director Leonid Khlebnikov and the young playwright Alexander Galin has been a profitable one. They are now working on a new production "The Eastern Stand" with artists from the Sovremennik Theatre.



These are two of the illustrations by the 16-year-old artist A. Burmistrov to Dickens' "Posthumous Papers of the Pickwick Club". The artist, who lives in a village in the Moscow Region, is particularly fond of works by Dickens, Turgenev and Chekhov. He is spellbound by the vivid momentum of these books. Burmistrov works in ink, India ink, charcoal and watercolours. Only time will tell whether he will become a professional artist—now he is but a discerning and thoughtful reader.



Books. A collection of verse and poems by Rabindranath Tagore has been published in Yerevan in the Armenian language. In recent years publishers in Soviet Armenia have put out a wide selection of Indian literature, the anthologies "Short Stories by Indian Writers" and "Ancient India's Poetry", for instance, as well as novels and stories by Rabindranath Tagore, Chichten Chander, and Narayan. They have also published magazines acquainting readers with Urdu texts and Upnishads.

## EXPERIMENTAL THEATRE AS PACE-SETTER IN MOSCOW

The Mayakovsky Theatre has put on a play, "See Who Has Come!" This is a satirical comedy about people who have succeeded in achieving everyday comfort though at the expense of spiritual aspirations. The young director Boris Morozov, who won acclaim for his recent production of "Cyano Bergerac", rightfully shared the success with the play's author Vladimir Arvo.

Arvo is hardly a young writer (he is well known for his books for children), though this is his first attempt as a playwright. And, for this reason, he can rightfully be included among the new generation of people writing for the theatre—a generation which is increasingly attracting the attention of the public. Among them is Lyudmila Petrushevskaya and Semyon Zlotnikov, Alexander Galin and Galina Ragumovskaya, Alexander Remez and Alexei Dudarev. It is to this powerful inflow of new talented authors that we owe the appearance of the "small stages" that are now part of nearly every Moscow theatre and are meant for experimental work.

One of the more important characteristics of the current season consists in the fact that many of yesterday's experimental directors, playwrights, etc., are today acquiring the status of pace-setters in the theatre. The creative alliance between the experienced Maly Theatre director Leonid Khlebnikov and the young playwright Alexander Galin has been a profitable one. They are now working on a new production "The Eastern Stand" with artists from the Sovremennik Theatre.

Not long ago Anatoly Vasilyev directed Viktor Slavkin's tragic-comedy, "The Grown-up Daughter of a Young Man", which is playing to full houses at the Stanislavsky Drama Theatre. Wide recognition has come to the young director. And he has now received a rather flattering invitation to produce "King Lear" at the Moscow Art Theatre.

In general the Moscow Art Theatre boldly upholds on to its stage those who yesterday were known only to a narrow circle of professionals. This also applies to two young producers invited from Leningrad—Kana Glinkas and Lev Dodin.

Last year Glinkas directed the documentary drama "The Small



The 20-year-old British organ-player John Scott has started his tour of this country with a performance in the Tchaikovsky Concert Hall in Moscow. This talented young performer is a graduate from the music department of Cambridge University. In 1978 he won first prize at the International Organists' Contest in Manchester. He will be playing a programme of works by Mozart, Sweeney, J. S. Bach, Liszt, Messiaen and other composers. John Scott will also give recitals in Leningrad, Odessa and Lvov.

## WHAT'S ON!

January 15-17

### THEATRES

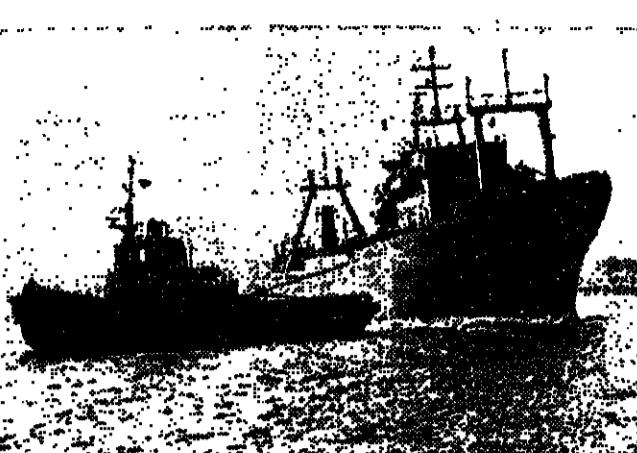
Kremlin Palace of Congresses (Kremlin), 16 (eve) — Khachaturian, "Clipdino" (ballet). Bolshoi Theatre (Sverdlov Sq.), 15 — Mussorgsky, "Boris Godunov" (opera), 16 (mat) — Prokofiev, "Betrothal in the Monastery" (opera); 16 (eve) — One-act ballets: Svetlanov, "The Red Cuckoo Rose"; Mahler, "La rose malade"; Shchedrin, "Carmen-Suite". Stanislavsky and Nemirovich-Danchenko Musical Theatre (17 Pushkinaya St.), 15 — Zhuravlev, "Mozart Behind Us" (opera), 16 (mat) — Vainberg, "The Golden Key" (ballet); 16 (eve) — Tchaikovsky, "Eugene Onegin" (opera), 17 — Tchaikovsky, "Swan Lake" (ballet).

### FILMS

Yo-ho (Bulgaria). About the friendship that developed between a young man and a ten-year-old kid in hospital. Cinema: "Soda" (31 Sretensky Blvd.), Metro, Shchukinovskaya.

Exhibition Halls of the Moscow Branch of the USSR Artists Union (7-8 Begovaya St.). About 100 paintings by Moscow artists: Cubists; landscapes, canvases depicting old Russian architecture as well as historical scenes. Daily, except Tuesday, noon to

# BUSINESS



Shipbuilders in Stralsund, the GDR, have built 1,200 ships for their Soviet customers. This supertanker "Nikolai Afanasyev", No. 1200, is being towed out of the shipyards.

Photo ADN-TASS

## FRENCH TECHNOLOGY FINDS ITS SOVIET USES

Late last year Soviet Mashinostroyeniye signed a contract worth almost 3,000 million francs with French Techelp, reports Antoine Kyri, the National Bank of Paris permanent representative in Moscow.

Among the immediate results of the "Agroprom" exhibition was a contract for a licence for the manufacture of axles and driving gear for harvesters. At present under discussion is the participation of French companies in the modernization of about 30 vegetable stores in Moscow. The Soviet-French road-tanker provides an excellent example of joint ventures.

This is a very successful venture as the tank costs virtually as much as the truck it goes with, so we obtain one KamAZ truck for a tank. The sales of such tanks to third countries are now being discussed. Hungary, for example, is very eager to buy road tankers composed of KamAZ trucks and French tanks. This illustrates two things—that France has the necessary

## FAIRY-TALE HEROES AS AMBASSADORS

The craftsmen turning out the Kholui lacquered miniatures in Russia do business with many countries. Recently V/O Novopromexport signed another agreement with the American Sohia company for the delivery of a large

batch of such miniatures to the United States.

A similar trade agreement was signed with the Marc Clark Districh company of West Germany.

Almo Rikka said that the many-sided business relations between the two countries will continue to expand in 1983. The intensive development of a number of Finnish industries in particular ship-building, the pulp-and-paper and nuclear industry and metallurgy, has become possible mainly owing to the firm trade and economic relations with the Soviet Union. Special attention at the present time, Almo Rikka said, is being paid to expanding cooperation in the construction and reconstruction of industrial facilities and industrial cooperation.

## RAILWAYS OF FRIENDSHIP

In 1983-84 the Polish Budimex foreign trade organization will carry out restoration and reconstruction work on more than ten historic monuments in the Estonian capital of Tallinn. Among them are three museums (archaeological, historical and art); and buildings which in future will be turned into cafés, a shop for the Melodiya recording company, a jeweller's workshop plus shop, and a club for tourists, etc.

At present Soyuzastronexport is discussing with Polish representatives the restoration of several buildings of the Tretyakov Gallery in Moscow.

## AIR CENTRE FOR CMEA NATIONS

Work is on in Ulyanovsk, a town on the Volga, on an airfield complex for a centre for the joint training of technicians and air-control tower personnel for the civil aviation of CMEA member-countries. Bulgarian and GDR pilots have already undertaken their first training flights. The complex has equipment which enables aircraft to land in practically any weather, while its runway can handle all types of modern aircraft.

The construction is underway in a 120,000-square-metre block where aircraft will be taught to land to fly planes.

OVER 300 POWER PROJECTS IN VARIOUS COUNTRIES WITH THE TOTAL CAPACITY OF 66 MLN KW HAVE BEEN OR ARE BEING BUILT WITH TECHNICAL ASSISTANCE OF VSESOUZNOYE OBJEDINENIYE "TECHNOPROMEXPORT"

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- delivery of complete hardware sets;
- assembly and adjustment of equipment on site;
- start-up operations;
- supervision on site;
- training of the local personnel in the Customer's country and in the USSR.

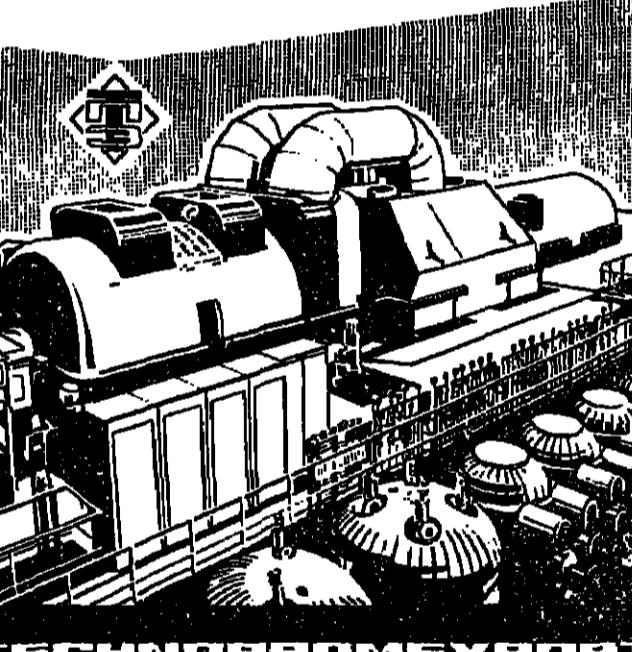
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113324 Moscow, USSR.

Telephone: 220-15-23  
Telex: 411158



## RESTORATION BY POLISH EXPERTS

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Recently V/O Soyuzastronexport and Budimex signed another contract for restoration work in the old part of Tallinn — on the Vake, Rannaviravo rampart, for example. The contract is worth over 2,000,000 rubles. The work is to be completed in 1984.

Soyuzastronexport has been cooperating with Budimex for over five years now. In 1982 the Lataki-Kamenshchik line, the Taurius-Homa-phosphate to pits line and the Damascus-Hama-Haleqi line. Now we are cooperating in the expansion of our railway network.

The Soviet experts sent by the USSR to Syria had to work in difficult conditions. Soviet organizations also supplied machine mechanisms and equipment needed for the construction and operation of our railways.

In accordance with earlier contracts concluded, the USSR will supply and reconstruct our railroads. The complex has equipment which enables aircraft to land in practically any weather, while its runway can handle all types of modern aircraft.

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